

CLAIMS

What is claimed is:

1. A clamping method for attaching a portion of a wire to a portion of at least one lead finger of a lead frame using a clamp in a wire bonding apparatus having a heat block for supporting said at least one lead finger during a wire bonding operation comprising:
providing an independently movable clamp for movement in at least one x-axis direction, at least one y-axis direction, and at least one z-axis direction; and
positioning said independently movable clamp over a portion of said at least one lead finger for clamping said at least one lead finger in position on a portion of said heat block for attaching of at least said portion of said wire thereto during a wire bond operation of said wire bonding apparatus.
2. The clamping method of claim 1, further comprising:
actuating said wire bonding apparatus for bonding said portion of said wire to said at least one lead finger.
3. The clamping method of claim 2, further comprising:
disengaging said independently movable clamp from said portion of said at least one lead finger before removal of said apparatus from said at least one lead finger on said heat block.
4. The clamping method of claim 1, wherein said independently movable clamp comprises a resiliently mounted clamp.
5. An attachment method for attaching a portion of a wire to a portion of a lead finger of a lead frame using a first clamp and an independently movable clamp in a wire bonding apparatus having a heat block comprising:
positioning a first clamp over a portion of said lead finger for clamping said lead finger in a position on said heat block during said bonding said portion of said wire thereto, said first

clamp comprising a clamp movable in at least one x-axis direction, at least one y-axis direction, and at least one z-axis direction; and

positioning an independent clamp over another portion of said lead finger for retaining said lead finger in said position on a portion of said heat block during said bonding of said wire thereto.

6. The method of claim 5, further comprising:

actuating apparatus for bonding said portion of said wire to said portion of said lead finger in said wire bonding apparatus.

7. The method of claim 6, further comprising:

removing said independent clamp from engagement with said portion of said lead finger before removal of said apparatus from said lead finger.

8. The method of claim 5, wherein said independent clamp comprises a resiliently mounted clamp.

9. A method for attaching at least a portion of a wire to a portion of a lead finger of a lead frame using a plurality of clamps in a wire bonding apparatus having a heat block comprising:

positioning a first independent clamp over a portion of said lead finger for retaining said lead finger on a portion of said heat block for bonding a portion of said wire thereto, said first independent clamp movable in at least one x-axis direction, at least one y-axis direction, and at least one z-axis direction; and

positioning a second independent clamp over another portion of said lead finger for restraining said lead finger in a position on a portion of said heat block for said bonding of said wire thereto, said second independent clamp movable in said at least one x-axis direction, said at least one y-axis direction, and said at least one z-axis direction.

10. The method of claim 9, further comprising:
actuating an apparatus for bonding said portion of said wire to said portion of said lead finger.

11. The method of claim 10, further comprising:
removing said second independent clamp from said portion of said lead finger before removal of
said apparatus from said lead finger supported on a portion of said heat block.

12. The method of claim 9, wherein said second independent clamp comprises a
clamp for positioning between said first independent clamp and an end of said lead finger.

13. The method of claim 9, wherein said first independent clamp and said second
independent clamp each comprise an independently movable clamp with respect to each other
clamp and said lead finger.